From: (b)(6)
To: (b)(6) NAVFAC Atlantic; (b)(6) NAVFAC LANT, EV
Cc: (b)(6) ; (b)(6) (b)(6) ; (b)(6)
Subject: [Non-DoD Source] Noise Review
Date: Friday, June 9, 2017 2:26:51 PM
Attachments: image001.jpg
Whidbey Noise Analysis Technical Review Resolution_June 2017_v1 For Navy....docx

---

(b)(6) (b)(6) ,

Attached is a summary of the technical noise review process and key resolutions identified for updates to the model. Please let our team know if you have any questions or would like to discuss.

Thanks!

(b)(6)

(b)(6)
(b)(6) @ene.com • www.ene.com

Whidbey Noise Analysis Technical Review & Resolution

9 June 2017

1. Percentage of Departures at MIL Power vs. Afterburner (AB) Power

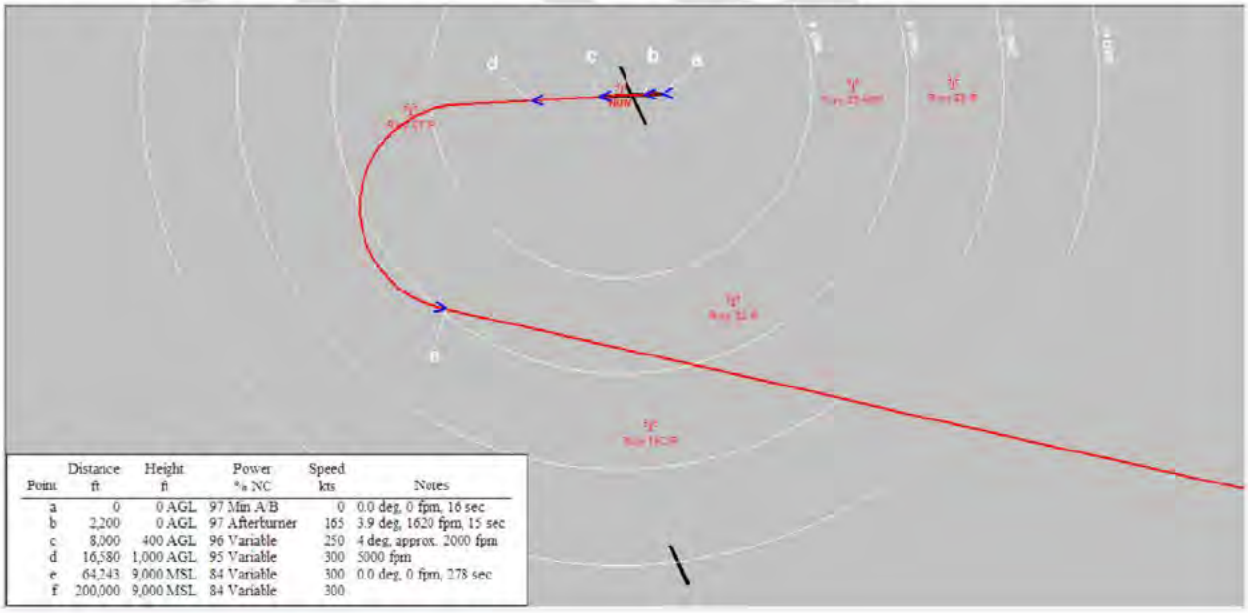
Clarify the percentage use of afterburner (AB) for full-stop departures. The modeling parameters have AB departures at 80%. Confirmed through pilot mark-up of the departure profiles that AB departures are utilized all the time (100%). This percentage updated during the refinement process to ensure consistency with confirmed AB utilization.

RESOLUTION: The departure utilization was updated to 100% AB for all scenarios.

2. Steep Departure Flight Profile from Ault Field

Clarify modelled AB departure profile for the EA-18G. The modelled profile has a steep climb at the end of the runway going from 400 ft AGL to 1,500 ft AGL in 1,250 ft of track distances. This results in an effective climb rate of approximately 20,000 ft/min. Additionally, after this steep climb, the climb out rate confirmed through pilot mark-ups is less than the modelled profile.

RESOLUTION: The departure profile was updated with a slower climb out rate until cruise altitude is reached. The update is based on inputs received on 22 May 2017 from the Navy. The initial climb out is modeled at 2,000 ft/min and then increases to 5,000 ft/min approximately 1.3 nm after the end of the runway. The updated profile is provided in **Figure 1**. The combination of 100% AB departure and the slower climb out rate results in increases in the DNL levels.



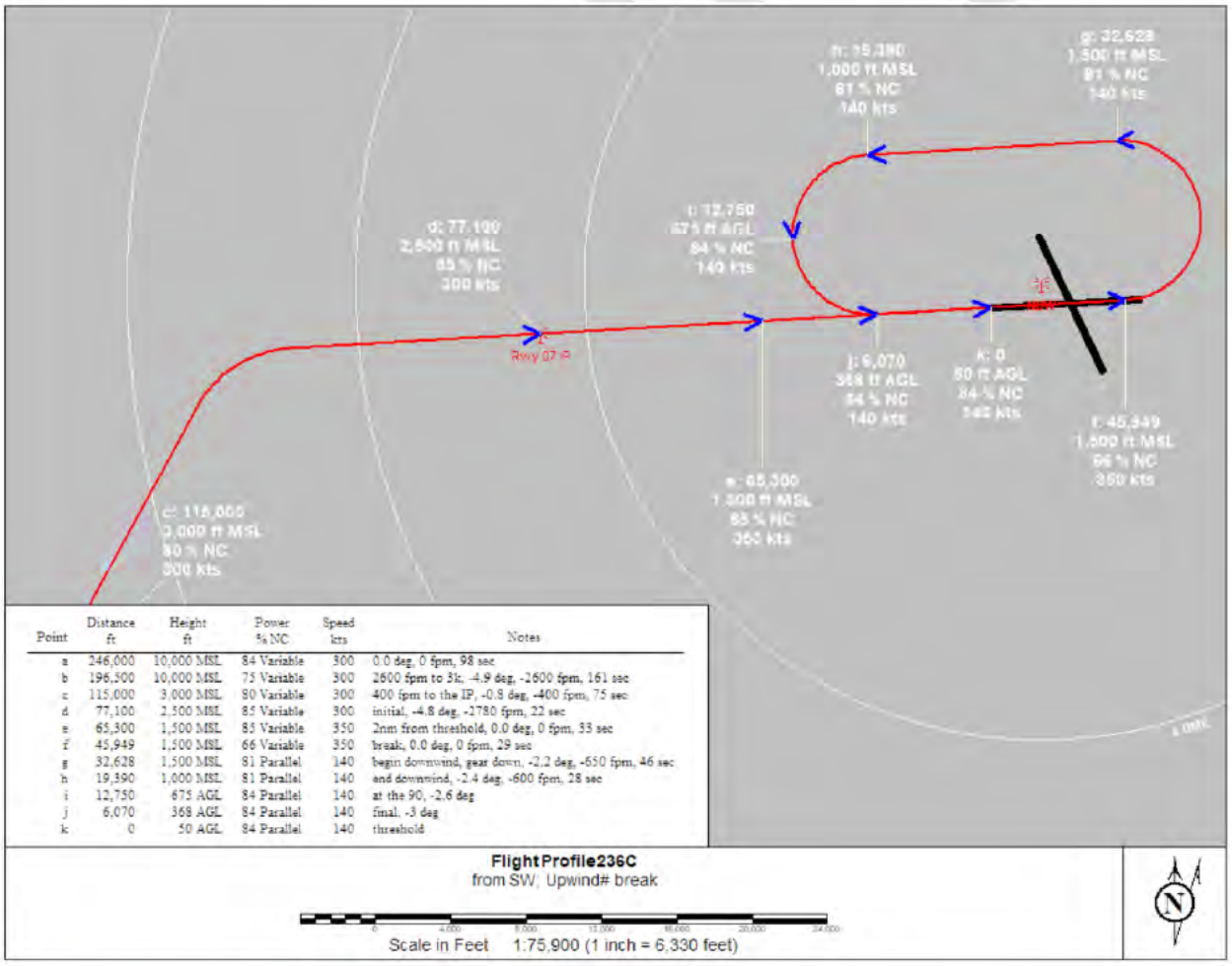
Point	Distance ft	Height ft	Power %s NC	Speed kts	Notes
a	0	0 AGL	97 Min A/B	0	0.0 deg, 0 fpm, 16 sec
b	2,200	0 AGL	97 Afterburner	165	3.9 deg, 1620 fpm, 15 sec
c	8,000	400 AGL	96 Variable	250	4 deg, approx. 2000 fpm
d	16,580	1,000 AGL	95 Variable	300	5000 fpm
e	64,243	9,000 MSL	84 Variable	300	0.0 deg, 0 fpm, 278 sec
f	200,000	9,000 MSL	84 Variable	300	

Figure 1. Updated Departure Profile for EA-18G

3. Flight Profile/Power Settings for Overhead Break Arrival

The modelled overhead break arrival profiles for the EA-18G have differences relative to overhead break arrival profiles used at other airfields. The main differences are maintaining engine power at 85% NC through the breaking turn to downwind and reducing engine power to flight idle for the downwind leg. At other airfields, engine power is cut to flight idle at the break and then increased to 85% NC on downwind leg as the aircraft configures. Other differences are the EA-18G descending and decelerating on the downwind leg rather than maintain level flight and constant airspeed. The descent and decelerations does not seem large enough to account for aircraft maintaining a flight idle engine power setting while also configuring the aircraft.

RESOLUTION: The overhead break arrival profile was updated to have flight idle engine power at the break point and establish 81% NC engine power at the start of the downwind leg. The updated overhead break profile is provided in **Figure 2**. The overhead break arrival portion of the interfacility profiles between Ault Field and OLF Coupeville were also updated with the same parameters.



Point	Distance ft	Height ft	Power %NC	Speed kts	Notes
a	246,000	10,000 MSL	84 Variable	300	0.0 deg, 0 fpm, 98 sec
b	196,300	10,000 MSL	75 Variable	300	2600 fpm to 3k, -4.9 deg, -2600 fpm, 161 sec
c	115,000	3,000 MSL	80 Variable	300	400 fpm to the IP, -0.8 deg, -400 fpm, 75 sec
d	77,100	2,500 MSL	85 Variable	300	initial, -4.8 deg, -2780 fpm, 22 sec
e	65,300	1,500 MSL	85 Variable	350	2nm from threshold, 0.0 deg, 0 fpm, 33 sec
f	45,949	1,500 MSL	66 Variable	350	break, 0.0 deg, 0 fpm, 29 sec
g	32,628	1,500 MSL	81 Parallel	140	begin downwind, gear down, -2.2 deg, -650 fpm, 46 sec
h	19,390	1,000 MSL	81 Parallel	140	end downwind, -2.4 deg, -600 fpm, 28 sec
i	12,750	675 AGL	84 Parallel	140	at the 90, -2.6 deg
j	6,070	368 AGL	84 Parallel	140	final, -3 deg
k	0	50 AGL	84 Parallel	140	threshold

Figure 2. Updated Overhead Break Arrival Profile for EA-18G

4. Straight-in Arrival Configuration Distance

The modelled straight-in arrival has the configuration point at 10 DME. Pilot mark-up notes state 8 DME for the configuration point.

RESOLUTION: **Navy confirms that instrumental arrivals normally extend gear around 10 DME. No update required.**

5. 2-degree vs. 3-degree Glide Slope for FCLP at Ault Field

The modelled EA-18G FCLP profile at Ault Field has a -2.1° glideslope on final. Should the FCLP final have a -3.0° glideslope? The FCLP pattern at OLF Coupeville has a -3.0° glideslope as expected.

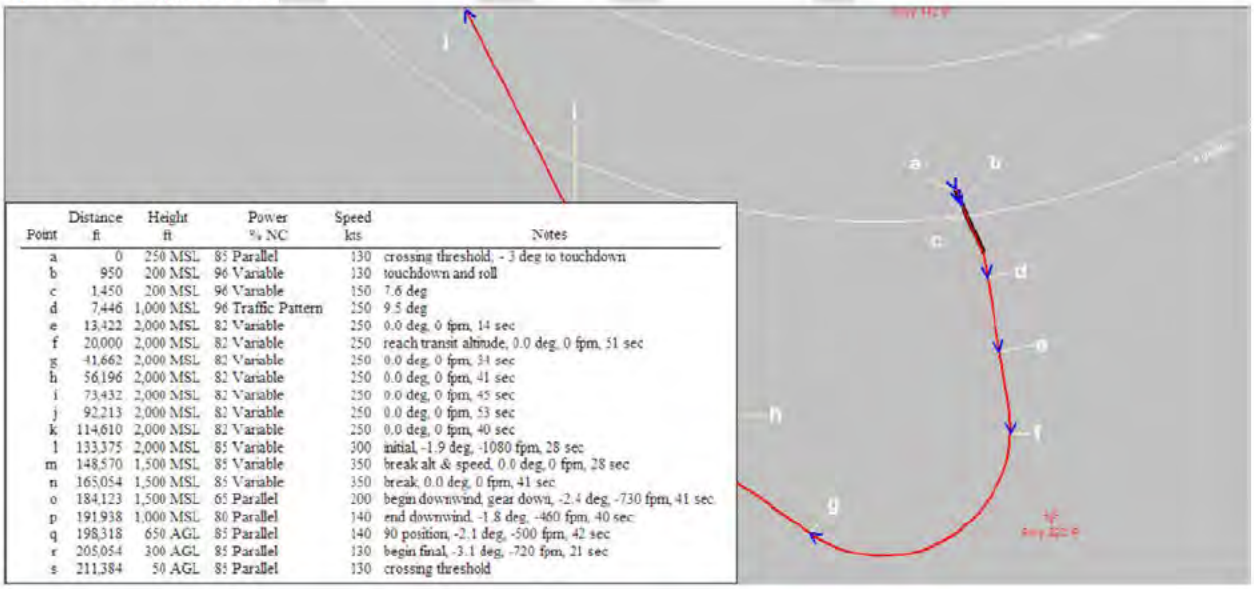
RESOLUTION: **The FCLP patterns at Ault Field were updated to have -3.0° glideslope. This update has marginal effect on the DNL values.**

****

6. Full Stop Departures at OLF Coupeville

The modelled departures from OLF Coupeville are full-stop departures.

RESOLUTION: **The interfacility departures from OLF Coupeville were updated to be a rolling departure as shown in Figure 3. This update has negligible impact on the overall DNL values since this area is controlled by the FCLP operations.**



Point	Distance ft	Height ft	Power % NC	Speed kts	Notes
a	0	250 MSL	85 Parallel	130	crossing threshold, - 3 deg to touchdown
b	950	200 MSL	96 Variable	130	touchdown and roll
c	1,450	200 MSL	96 Variable	150	7.6 deg
d	7,446	1,000 MSL	96 Traffic Pattern	250	9.5 deg
e	13,422	2,000 MSL	82 Variable	250	0.0 deg, 0 fpm, 14 sec
f	20,000	2,000 MSL	82 Variable	250	reach transit altitude, 0.0 deg, 0 fpm, 51 sec
g	41,662	2,000 MSL	82 Variable	250	0.0 deg, 0 fpm, 34 sec
h	56,196	2,000 MSL	82 Variable	250	0.0 deg, 0 fpm, 41 sec
i	73,432	2,000 MSL	82 Variable	250	0.0 deg, 0 fpm, 45 sec
j	92,213	2,000 MSL	82 Variable	250	0.0 deg, 0 fpm, 53 sec
k	114,610	2,000 MSL	82 Variable	250	0.0 deg, 0 fpm, 40 sec
l	133,375	2,000 MSL	85 Variable	300	initial, -1.9 deg, -1080 fpm, 28 sec
m	148,570	1,500 MSL	85 Variable	350	break alt & speed, 0.0 deg, 0 fpm, 28 sec
n	165,054	1,500 MSL	85 Variable	350	break, 0.0 deg, 0 fpm, 41 sec
o	184,123	1,500 MSL	65 Parallel	200	begin downwind, gear down, -2.4 deg, -730 fpm, 41 sec
p	191,938	1,000 MSL	80 Parallel	140	end downwind, -1.8 deg, -460 fpm, 40 sec
q	198,318	650 AGL	85 Parallel	140	90 position, -2.1 deg, -500 fpm, 42 sec
r	205,054	300 AGL	85 Parallel	130	begin final, -3.1 deg, -720 fpm, 21 sec
s	211,384	50 AGL	85 Parallel	130	crossing threshold

Figure 3. Departure portion of the Interfacility Profile from OLF Coupeville to Ault Field

7. Acoustic Night Arrivals and Departures

For most EA-18G squadrons, the acoustic nighttime departures are greater than acoustic nighttime arrivals. This occurs when aircraft departures occur before 0700. The level of acoustic nighttime operations is lower.

RESOLUTION: The operational day/night splits were not modified since the change would have negligible influence on the DNL values.